

AMENDMENTS TO THE CLAIMS:

Please cancel Claims 9 through 16 and 18 without prejudice to or disclaimer of the subject matter recited therein.

Please add Claim 19 through 31, as follows:

1- 18. (Cancelled)

19. (New) A video information processing apparatus configured to convert interlaced video information into progressive video information, comprising:

    a pixel information storing unit for storing inputted pixel information on reference pixels in each of a plurality of fields;

    a reference pixel motion information generating unit for generating motion information on each reference pixel which indicates whether a reference pixel is a moving image or a still image at least based on difference between the pixel information on two reference pixels at the same position in different fields;

    a reference pixel motion information storing unit for storing the motion information generated by the reference pixel motion information generating unit for a plurality of fields;

    an intrafield interpolation pixel motion information generating unit for generating first motion information based on the motion information on a reference pixel adjacent to an interpolation pixel in a field of interest;

    an interfield interpolation pixel motion information generating unit for generating second motion information based on the motion information on a reference pixel in a field previous to the field of interest and the motion information on a reference pixel in a next field following the field of interest, the reference pixels in the previous field and next field being at the same position as the interpolation pixel in the field of interest; and

an interpolation pixel motion determining unit for determining whether motion information on the interpolation pixel is a moving image or a still image based on the first motion information generated by the intrafield interpolation pixel motion information generating unit and the second motion information generated by the interfield interpolation pixel motion information generating unit.

20. (New) A video information processing apparatus according to claim 19, wherein:

the intrafield interpolation pixel motion information generating unit is adapted to determine the first motion information as a moving image when the motion information on any one of two reference pixels adjacent to the interpolation pixel in the field of interest is a moving image, and otherwise, to determine the first motion information as a still image; and

the interfield interpolation pixel motion information generating unit is adapted to determine the second motion information as a moving image when both the motion information on the reference pixel in the previous field and the motion information on the reference pixel in the next field, the reference pixels in the previous field and next field being at the same position as the interpolation pixel in the field of interest, indicate a moving image, and otherwise, to determine the second motion information as a still image.

21. (New) A video information processing apparatus according to claim 20, wherein the interpolation pixel motion determining unit is adapted to determine the motion information on the interpolation pixel in the field of interest as a moving image when either the first motion information or the second motion information indicates a moving image, and otherwise, to determine the motion information on the interpolation pixel in the field of interest as a still image.

22. (New) A video information processing apparatus according to claim 19, wherein the reference pixel motion information generating unit is adapted:

to generate third motion information based on difference between the pixel information on a reference pixel in the field of interest and the pixel information on a reference pixel in a field previous to the field of interest, the reference pixel in the previous field being at the same position as the reference pixel in the field of interest;

to generate fourth motion information based on the motion information on a reference pixel in the field previous to the field of interest and the motion information on a reference pixel in a next field following the field of interest, the reference pixels in the previous field and next field being at the same position as the reference pixel in the field of interest; and

to generate the motion information which indicates whether the reference pixel in the field of interest is a moving image or a still image based on the third motion information and fourth motion information.

23. (New) A video information processing apparatus according to claim 22, wherein the reference pixel motion information generating unit is adapted:

to determine the third motion information as a moving image when the difference between the pixel information on the reference pixel in the field of interest and the pixel information on the reference pixel in the previous field is greater than or equal to a predetermined threshold, and to determine the third motion information as a still image when the difference between the pixel information on the reference pixel in the field of interest and the pixel information on the reference pixel in the previous field is smaller than the predetermined threshold;

to determine the fourth motion information as a moving image when both the motion information on the reference pixel in the previous field and the motion information on the

reference pixel in the next field indicate a moving image, and otherwise, to determine the fourth motion information as a still image; and

to determine the motion information on the reference pixel in the field of interest as a moving image when either the third motion information or the fourth motion information indicates a moving image, and otherwise, to determine the motion information on the reference pixel in the field of interest as a still image.

24. (New) A video information processing apparatus according to claim 19, further comprising:

an interpolation pixel information generating unit for generating pixel information on the interpolation pixel based on the pixel information in the previous field previous to the field of interest when the motion information on the interpolation pixel in the field of interest is determined as a still image by the interpolation pixel motion determining unit, and for generating pixel information on the interpolation pixel based on the pixel information in the field of interest when the motion information on the interpolation pixel in the field of interest is determined as a moving image by the interpolation pixel motion determining unit.

25. (New) A video information processing method for converting interlaced video information into progressive video information, comprising:

a reference pixel motion information generating step of generating motion information on each reference pixel which indicates whether a reference pixel is a moving image or a still image at least based on difference between the pixel information on two reference pixels at the same position in different fields;

a reference pixel motion information storing step of storing the motion information generated in the reference pixel motion information generating step for a plurality of fields;

an intrafield interpolation pixel motion information generating step of generating first motion information based on the motion information on a reference pixel adjacent to an interpolation pixel in a field of interest;

an intrafield interpolation pixel motion information generating step of generating second motion information based on the motion information on a reference pixel in a previous field previous to the field of interest and the motion information on a reference pixel in a next field following the field of interest, the reference pixels in the previous field and next field being at the same position as the interpolation pixel in the field of interest; and

an interpolation pixel motion determining step of determining whether motion information on the interpolation pixel is a moving image or a still image based on the first motion information generated in the intrafield interpolation pixel motion information generating step and the second motion information generated in the interfield interpolation pixel motion information generating step.

26. (New) A video information processing method according to claim 25, wherein: the intrafield interpolation pixel motion information generating step comprises the steps of determining the first motion information as a moving image when the motion information on any one of two reference pixels adjacent to the interpolation pixel in the field of interest is a moving image, and otherwise, determining the first motion information as a still image; and

the intrafield interpolation pixel motion information generating step comprises the steps of determining the second motion information as a moving image when both the motion information on the reference pixel in the previous field and the motion information on the reference pixel in the next field, the reference pixels in the previous field and next field being at the same position as the interpolation pixel in the field of interest, indicate a moving image, and otherwise, determining the second motion information as a still image.

27. (New) A video information processing method according to claim 26, wherein the interpolation pixel motion determining step comprises the steps of:

determining the motion information on the interpolation pixel in the field of interest as a moving image when either the first motion information or the second motion information indicates a moving image, and otherwise, determining the motion information on the interpolation pixel in the field of interest as a still image.

28. (New) A video information processing method according to claim 25, wherein the reference pixel motion information generating step comprises the steps of:

generating third motion information based on difference between the pixel information on a reference pixel in the field of interest and the pixel information on a reference pixel in a field previous to the field of interest, the reference pixel in the previous field being at the same position as the reference pixel in the field of interest;

generating fourth motion information based on the motion information on a reference pixel in the field previous to the field of interest and the motion information on a reference pixel in a next field following the field of interest, the reference pixels in the previous field and next field being at the same position as the reference pixel in the field of interest; and

generating the motion information which indicates whether the reference pixel in the field of interest is a moving image or a still image based on the third motion information and fourth motion information.

29. (New) A video information processing method according to claim 28, wherein the reference pixel motion information generating step comprises the steps of:

determining the third motion information as a moving image when the difference between the pixel information on the reference pixel in the field of interest and the pixel information on the reference pixel in the previous field is greater than or equal to a

predetermined threshold, and to determine the third motion information as a still image when the difference between the pixel information on the reference pixel in the field of interest and the pixel information on the reference pixel in the previous field is smaller than the predetermined threshold;

determining the fourth motion information as a moving image when both the motion information on the reference pixel in the previous field and the motion information on the reference pixel in the next field indicate a moving image, and otherwise, to determine the fourth motion information as a still image; and

determining the motion information on the reference pixel in the field of interest as a moving image when either the third motion information or the fourth motion information indicates a moving image, and otherwise, to determine the motion information on the reference pixel in the field of interest as a still image.

30. (New) A video information processing method according to claim 25, further comprising:

an interpolation pixel information generating step of generating pixel information on the interpolation pixel based on the pixel information in the previous field previous to the field of interest when the motion information on the interpolation pixel in the field of interest is determined as a still image in the interpolation pixel motion determining step, and of generating pixel information on the interpolation pixel based on the pixel information in the field of interest when the motion information on the interpolation pixel in the field of interest is determined as a moving image in the interpolation pixel motion determining step.

31. (New) An apparatus comprising:

pixel information storing means for storing inputted pixel information on reference pixels in each of a plurality of fields;

reference pixel motion information generating means for generating motion information on each reference pixel which indicates whether a reference pixel is a moving image or a still image at least based on difference between the pixel information on two reference pixels at the same position in different fields;

reference pixel motion information storing means for storing the motion information generated by the reference pixel motion information generating means for a plurality of fields;

intrafield interpolation pixel motion information generating means for generating first motion information based on the motion information on a reference pixel adjacent to an interpolation pixel in a field of interest;

interfield interpolation pixel motion information generating means for generating second motion information based on the motion information on a reference pixel in a field previous to the field of interest and the motion information on a reference pixel in a next field following the field of interest, the reference pixels in the previous field and next field being at the same position as the interpolation pixel in the field of interest; and

interpolation pixel motion determining means for determining whether motion information on the interpolation pixel is a moving image or a still image based on the first motion information generated by the intrafield interpolation pixel motion information generating means and the second motion information generated by the interfield interpolation pixel motion information generating means.